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Solid Earth Discussions

Interactive comment on "Relative Timing of Uplift along the Zagros Mountain Front Flexure Constrained by Geomorphic Indices and Landscape Modelling, Kurdistan Region of Iraq" *by* Mjahid Zebari et al.

Anonymous Referee #1

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The authors of this manuscript try to use geomorphic indices and results of landscape modelling to constrain the relative timing of uplift of three anticlines. In general, the topic is interesting and it will be a substantial contribution to the journal. Nevertheless, the revisions including the methodology and discussion, as well as the rearrangements of sections are still needed before publication. Major comments and suggestions are listed below.

1. Introduction: the authors should clearly state the importance of this study. Why the detailed spatial and temporal distribution of deformation ... is not yet well understood ?

Due to the lack of subsurface data, and/or this region is inaccessible for field surveys?

2. Section 3.1.1: with aim of assessing landscape maturity along thrust-related anticlines, hypsometric curves and integrals have often been used for (sub-) drainage basins. The methodology differs from the three incomplete hypsometric curves displayed in Fig. 7. Actually, the authors did not extract drainage basins even if the stream channels of the Harir anticline have been shown in Fig. 6a.

3. Section 3.1.5 Digital elevation models: this section does not belong to the 3.1 geomorphic indices.

4. Section 5.1: the authors just described the rock erodibility. They should be included in geological setting, instead of discussion part. Here, the authors stated " the stratigraphic column in the area consists of rocks with different erodibility" (page 11, line 29), and also mentioned in the conclusion "Due to the similarity in the lithology, structural setting and climate" (page 15, line 23-24). They should clearly state whether the difference exists or not.

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